

Abstract

Systems and methods of operating an array antenna are disclosed. The array antenna has configurable beamwidth and is operable in any of multiple operating modes associated with respective beamwidths. For example, operating an array antenna at a wide beamwidth for detecting incoming communication signals reduces scan times associated with individually scanning directional antennas. Switching to narrow beamwidth operation for subsequent exchange of communication signals provides higher antenna gain and reduces interference. Steering of beams and nulls in a gain pattern of an array antenna further reduces interference on wireless communication links. The benefits of each beamwidth are thereby exploited for particular functions, while many of the drawbacks of each beamwidth for other functions are avoided.